Hytera 5G MCX Solutions Enhance Operational Services at Xi'an Xianyang International Airport

Introduction

Xi'an Xianyang International Airport in Northwest China sought to transform its operational services through a comprehensive digital overhaul of its communications. It implemented a private 5G network, along with Hytera's HyTalk Pro PoC Software Management System and PNC560 5G terminals. The HyTalk Pro platform and terminals are able to interconnect mission-critical voice, video and data services, including enabling interoperability between broadband terminals and existing narrowband two-way radio systems. Integrated scanners on the PNC560s have enabled smart logistics and enhanced ground handling services. The new solution is enhancing operational efficiency and safety to provide a better service for passengers.

Project Name
Xi'an Xianyang International Airport 5G Project

Customer Name
Xi'an Xianyang International Airport

Project Start/End Dates
2024-2025

Project Location
Shaanxi Province, China

Industry
Airport

Products/Solutions
Hytera HyTalk Pro PoC Management Platform
MRPS (Multimedia Recording and Playback System)
PUC (Professional Unified Communication Platforms)
PNC560 PoC Handheld Radio Terminals

The Background

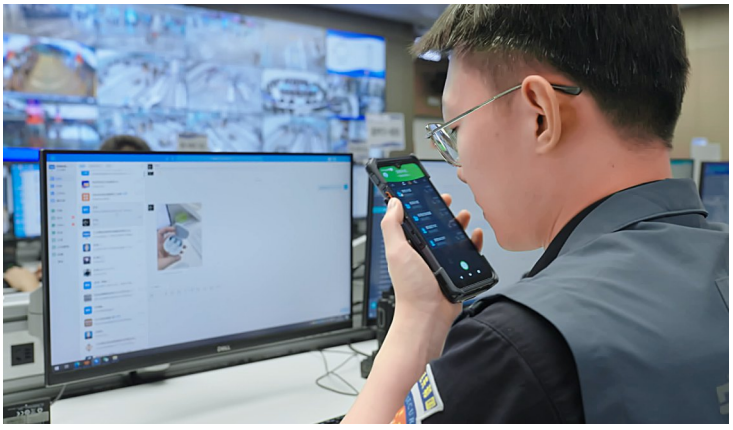
Xi'an Xianyang International Airport is the primary international gateway for Xi'an, the capital city of Shaanxi province in Northwest China. The airport spans 12 sq km and features four terminals (T1, T2, T3 and T5) with a combined floor area exceeding 1.1 million square metres. As the largest airport in Northwest China and the second largest in Northern China, Xi'an Airport plays a crucial role in facilitating regional and international air travel. Xi'an is accelerating a major digital transformation of the city and its facilities, including the upgrading of air, rail and road transport services. As part of this transformation, Xi'an Airport is currently undertaking Phase III of its expansion project, aimed at boosting capacity and operational efficiency.

The Challenge

At the heart of this expansion effort is the deployment of a digital-first communication system to meet the growing demands of safety, coordination and real-time responsiveness. The aim is to remove data silos and streamline voice, video and data channels to deliver a seamless, unified communications solution, so the airport can operate with enhanced agility, transparency and resilience.

The major challenge for any new communication solution is that it has to be able to support integrated narrowband two-way radio and broadband voice systems, video and data services across one unified platform. It has to be able to provide comprehensive coverage across the airport's large geographic footprint, from airport buildings to underground areas.

Finally, once the Phase III expansion is fully completed, the communications solution has to be able to support the goal of enabling the airport to become a multi-modal transportation hub, seamlessly connecting air, rail and highway networks. It will also enable the airport to play a pivotal role in supporting China's international transport corridors, expanding global air connectivity and fueling economic development across the greater Northwest region.



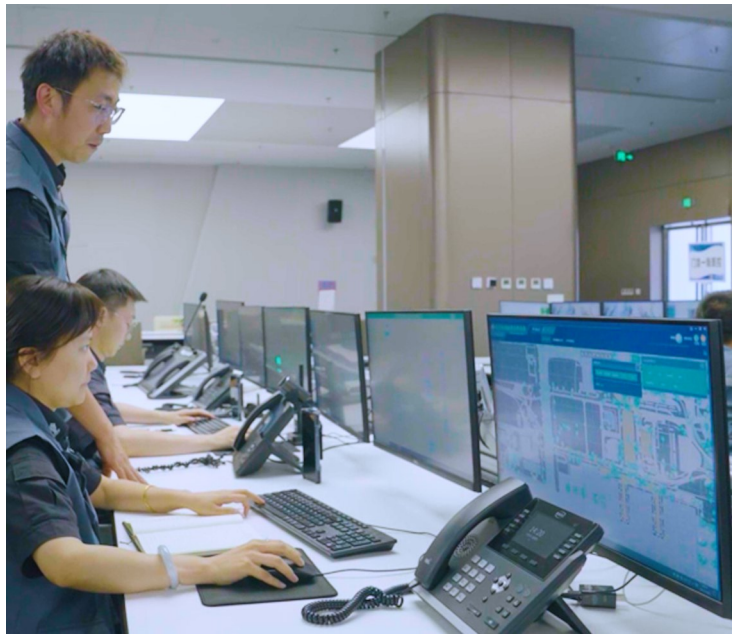
The Solution

To achieve this, the airport partnered with Hytera to implement a next-generation mission-critical communication system that supports high-bandwidth, high-reliability operations across all departments. A dedicated, private 5G cellular network was installed at the airport. Hytera provided its HyTalk Pro Push-to-Talk over Cellular (PoC) integrated software platform and PNC560 5G handheld smart devices. The solution includes the Hytera multimedia recording and playback system (MRPS).

Hytera HyTalk Pro software management platform was customized to meet the particular operational requirements of Xi'an Airport to provide a converged communication solution based around the PNC560 terminals. It is able to bridge communication gaps and enable seamless collaboration, as it integrates different radio systems including narrowband two-way radio, cellular broadband and WLAN, to provide integrated real-time voice, video, data and location-based services.

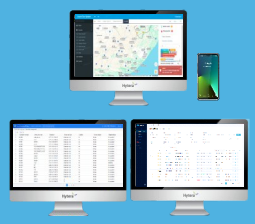
A total of 1,116 PNC560 devices were deployed across 12 critical departments, including air cargo logistics, ground handling, the Operations Control Center (OCC), security, maintenance, and passenger services.

The smart terminals enable airport staff to perform multiple functions in the field, from scanning cargo and submitting digital work orders to initiating voice or video calls with command centers. Each device leverages the high-speed 5G network to ensure low-latency communication, precise positioning, and secure data exchange, all of which are essential to ensure efficient daily airport operations.



Products

- Hytera HyTalk Pro PoC Management Platform
- MRPS (Multimedia Recording and Playback System)
- PUC (Professional Unified Communication Platforms)
- PNC560 PoC Handheld Radio Terminals



The Benefits

Integrated, Multi-mode Communications
Airport personnel are able to receive and transmit real-time mission-critical voice, video and data communications anywhere within the airport perimeter via the 5G private network with services managed by the Hytera HyTalk Pro software platform. The PNC560 terminal offers fast, low latency communications to facilitate smooth team communication and collaboration, which is vital to help ensure aircraft meet tight turnaround flight schedules.

Smart Logistics Management
Air cargo operations are now fully digitized thanks to the PNC560's integrated bar code and QR scanner. Staff can scan shipments on arrival, perform safety checks, and update logistics records in real time. Work orders are automatically synchronized with back-end systems, enabling transparent cargo flow tracking and more accurate status reporting. This enhances both operational visibility and regulatory compliance, particularly for international freight.

Reliable Ground Handling Coordination
The system ensures strong and uninterrupted 5G signal coverage throughout baggage handling areas, aircraft aprons and service roads. Real-time push-to-talk (PTT) and multimedia messaging allow ground crews to coordinate loading, unloading, and transport with speed and clarity. This directly reduces baggage transfer times and minimizes errors, thereby helping to improve on-time performance and passenger satisfaction.

Smarter and Safer Security Operations
Security and inspection teams benefit from dynamic patrol routing and live alert notifications. In the event of a safety incident, staff can initiate one-touch emergency video calls, transmitting real-time footage to command units for rapid assessment and response. Each PNC560 terminal is equipped with an emergency button that triggers cross-department coordination, instantly involving fire, medical, and police units when needed, helping to safeguard passengers and strengthen operational resilience.

Agile Airport Operations Center (AOC)
Hytera's platform supports high-precision positioning, enabling the AOC to monitor and dispatch personnel with pinpoint accuracy. Whether responding to a weather disruption or reallocating resources during peak traffic, the AOC maintains full situational awareness. All communication records are stored and logged via the MRPS, ensuring accountability and traceability in all command and dispatch processes.

Conclusion
The Xi'an Xianyang International Airport model showcases how 5G mission-critical communication technology can underpin infrastructure modernization, setting a benchmark for digital airport transformation in China and beyond.

Customer Testimonial

"Through the deployment of a dedicated 5G private network, combined with 5G-enabled smart terminals and a converged communication dispatch platform, we've empowered key airport operations — from command and emergency response to smart firefighting, security, and ground services — with mobile digital capabilities. This has resolved the long-standing challenge of broadband and narrowband system interoperability. More importantly, it marks a major step forward in building an integrated communications infrastructure that unifies broadband and narrowband, and supports smooth technology evolution. It forms a strong cornerstone for the airport's long-term digital transformation."

—Information & Data Department, Xi'an Xianyang International Airport

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